

# Critical Chain Project Management Ericsson

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# Purpose


## Critical Chain Project Management Results within Ericsson



# Agenda

1. Background on Ericsson and R&D project management
2. Project results
3. Implementation

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## Ericsson drives telecommunication history



# Project management



Introduction to PROPS ► Quick Start ► PROPS Training ► Printed Documentation ►



What to do  
when  
in the project

**Single Project Flow**  
PERSPECTIVE



**Project Organizational**  
PERSPECTIVE

Who is responsible  
for doing  
what in the project




Aligning all project  
efforts in the same  
business direction

**Business**  
PERSPECTIVE 

**Human**  
PERSPECTIVE 


Benefiting from the  
total competence and  
capacity of individuals  
and teams

## R&D Projects Within Ericsson


1. Time-driven
  2. Development of software and hardware
  3. Telecommunications area competence (scarce)
  4. High quality standards (99,999 % reliability or 5 minutes unplanned downtime per year)
- 



A lot of focus on test

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## A typical project

- Development of a new system release of AXE
- About one million man-hours
- In total two years lead-time
- Subproject scope:
  - System verification (30 persons)
  - Development of upgrading package (4-5 persons each)



## CC Introduction in Sirius

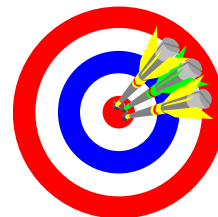


- No CCPM from the start
  - One month late on 1/3rd of project!
- Network of activities (appr. 50) laid out.
- Activity times were then cut into half (50%).
  - Remove safety time from each activity.
- The Critical Chain was identified.
  - Critical path + Resource consideration.
- Buffers (PB & FB's) was added to protect the critical chain.
  - Safety time added again to take care of the uncertainty.
- Resources were added to shorten the critical chain.
- The Project re-planning took 2 days.
  - Done with Line & Project together.

## Results achieved in Sirius ST



- Project was ready on time
- No cutting in scope took place, no spillovers
- Project concluded without adding a lot of extra resources
- Cost below project budget
- Testing more effective than ever



## Prepaid Service Logic



- Development of a new prepaid system for mobile networks
- Size of project 25 man-years and 315 KNCSS
- In total one year execution lead-time
- Project scope:
  - Architecture and design (max. 20 persons)
  - Test up to node integration level (max. 15 persons)
  - Support for charging network integration test
  - First office application

# Project Approach



- Building WBS
- Delphi sessions
- Risk management
- Network planning
- Build CCPM plan with buffers
- CCPM introduction to project members and steering group
- Focus on critical chains and buffer reporting

## Project Results

- Project was ready on time
- Customer Telecom Americas Brasil very happy
  - Follow-on order received
  - Extra customisations needed for changing requirements
- Highly motivated project team




# Project Overview

Year	Project	Leadtime	Cost	Quality
1999-2001	Beasty – new IVR with HW design	100%	98%	OK
2001-2002	SMS 5.0 – Provisioning system for IN networks	101%	96%	OK
2003-2004	PSL 2.1	99%	90%	OK
2003-2004	PSL 3.0	A few days early	Ongoing	ongoing


## Explanation on results

- Critical Chain focus on lead-time
- Quality was excellent on all products
  - We have very good software architects
  - And an excellent quality manager



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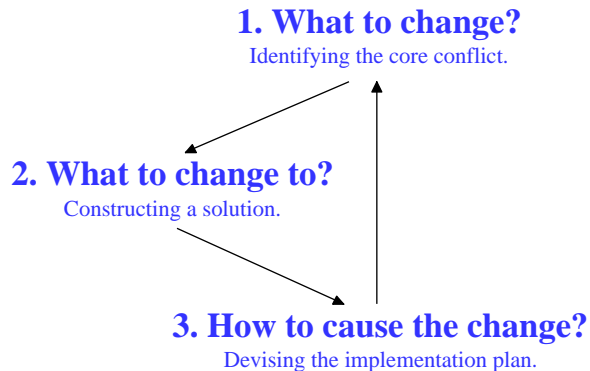
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# Implementation

Accelerated improvement revolves around answering the following three questions:

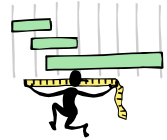


## The 6 Phases of Buy-In

- 1: Agreeing on the problem.
- 2: Agreeing on the direction of the solution.
- 3: Agreeing that the solution solves the problem.
- 4: Agreeing that the solution will not lead to any significant negative effects.
- 5: Agreeing on the way to overcome any obstacles that might block the implementation of the solution.
- 6: Agreeing to implement.



# Implementation - Overview



1. Buy in of management to lead and direct the change
2. Information and training
3. Initial drum and initial project critical chain schedules
4. Buffer Management and reporting

## What difficulties have I experienced?

- Management attention
- Not used to perform planning with logical networks
- Time plans with CC were longer!
  - The risks are put on the table
- Difficult to make 50/50 time estimations
- Training and support effort under-estimated
- How to change behaviour
  - student syndrome
  - multi-tasking
  - reporting



## And remember

- All risks are not eliminated!
  - You should be more immune to “common cause variation”
  - You still have to manage “special cause variation”
- Plan the implementation and run it as a project
- Stick to the plan, keep the momentum up
  - It’s easy to fall back in traditional behaviour
- Question all intermediate milestones, and avoid committing to dates for them







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